

REMARKS/ARGUMENTS

Claims 1-3 are pending in this Application.

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brebels et al. (US Patent 5,675,295) in view of Kornrumpf et al. (US Patent 5,355,102), further in view of Carey et al. (US Patent 5,219,787), further in view of Ohya et al. (US Patent 5,686,172) and further in view of at least one of Trinh et al. (US Patent 5,132,648), Peterson (US Patent 5,574,415), and Kroger (US Patent 4,490,733). Applicants respectfully traverse the rejection of claims 1-3.

Claim 1 recites:

“A method of producing a thin film circuit board used as a milli-wave or micro-wave module, the method comprising steps of:

cleaning a substrate comprising dielectric ceramic, and having a thickness of 0.05 mm to 2 mm and a flexural strength of 500 kgf/cm² to 4000 kgf/cm²;

forming a conductor film in a predetermined pattern on the substrate, said conductor film including at least one selected from Cu, Au, Ag, Al, Ni, Ti, Cr, Ni-Cr, Nb, and V;

forming an insulating film on the substrate to cover the conductor film, said insulating film comprising at least one organic resin selected from polyimide, epoxy resins, benzocyclobutene resins, acrylic resins, and cyclic olefin resins, and having a thickness of 20 μm or greater, an area of 5 cm² or less per pattern, and a stress of 15 MPa to 60 MPa;

patterning the insulating film; and

repeating the insulating film forming step and the insulating film patterning step more than once.” (emphasis added)

Further to the remarks presented in the Request for Reconsideration filed on January 6, 2004, Applicants submit the following remarks.

In the Advisory Action of January 30, 2004, the Examiner alleged that “one of ordinary skill in the art would consider Brebels’ design for ‘compactness’ to at least include insulating film areas on the order of 0.0002-0.1 cm².” In support of this allegation, the Examiner referred to Fig. 1 of Brebels’ to allegedly teach various

dimensions. However, the specification of Brebels et al. neither teaches nor suggests specific dimensions for any of the elements shown in Fig. 1, except for the microstrip closed loop line 4. Since the drawings of a patent are not drawn to scale, Applicants respectfully submit that the figures of Brebels et al. cannot be relied upon to allegedly teach specific dimensions, without support for such dimension in the specification. Accordingly, Applicants respectfully submit that, contrary to the Examiner's allegations, Brebels et al. fails to teach or suggest "forming an insulating film on the substrate to cover the conductor film, said insulating film comprising at least one organic resin selected from polyimide, epoxy resins, benzocyclobutene resins, acrylic resins, and cyclic olefin resins, and having a thickness of 20 μm or greater, an area of 5 cm^2 or less per pattern" as recited in Applicants' claimed invention.

The Examiner alleged that "contrary to applicants' arguments on page 6, Brebels teaches building up plural dielectric or insulating layers and plural patterning of each of several metal layers by conventional methods. It would have been obvious to have separately patterned each of plural dielectric or insulation layers separating the patterned metal layers (e.g. to prevent unwanted shorting between the metal patterns, etc.)." Applicants respectfully disagree.

Brebels et al. specifically discloses that multiple layers of low dielectric material are built up on the substrate and that the multiple layers to form a dielectric constant material 81 as seen in Figs. 17A -17D, not that layers of the dielectric constant material 81 are formed and patterned individually. In other words, Brebels et al. teaches a step of repeatedly forming an insulating film and a single step of patterning the insulating film.

Neither Brebels et al. nor any other cited reference teaches or suggests that dielectric or insulation layers can be separately formed and patterned, as alleged by the Examiner. The Examiner is reminded that prior art rejections must be based on evidence. Graham v. John Deere Co., 383 U.S. 117 (1966). Pursuant to MPEP 706.02(a), the Examiner is hereby requested to cite a reference in support of his

Serial No. 10/035,400
February 9, 2004
Reply to the Office Action dated October 9, 2003
Page 6 of 8

position that it was well known at the time of Applicants' invention to repeatedly form insulating films and repeatedly pattern the insulating films. If the rejection is based on facts within the personal knowledge of the Examiner, the data should be supported as specifically as possible and the rejection must be supported by an affidavit from the Examiner, which would be subject to contradiction or explanation by affidavit of Applicants or other persons. See 37 C.F.R. §1.104(d)(2).

Thus, Brebels et al. clearly fails to teach or suggest "repeating the insulating film forming step and the insulating film patterning step more than once" as recited in Applicants' claimed invention.

Kornrumpf et al., Carey et al., Ohya et al., Trinh et al., Peterson and Kroger were relied upon to allegedly cure various deficiencies of Brebels et al. However, none of Kornrumpf et al., Carey et al., Ohya et al., Trinh et al., Peterson and Kroger teaches or suggests "forming an insulating film on the substrate to cover the conductor film, said insulating film comprising at least one organic resin selected from polyimide, epoxy resins, benzocyclobutene resins, acrylic resins, and cyclic olefin resins, and having a thickness of 20 μm or greater, an area of 5 cm^2 or less per pattern" and "repeating the insulating film forming step and the insulating film patterning step more than once" as recited in Applicants' claimed invention.

MPEP 2141.02 sets forth that "in determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530 (Fed. Cir. 1983). The Examiner has reduced Applicants' claimed invention to various discrete elements and ideas without considering the invention as a whole. This is clearly evident by the fact the Examiner has relied upon 7 different references to allegedly teach various discrete features recited in Applicants' claimed invention.

Instead of basing the conclusion of obviousness on actual teachings or suggestions of the prior art and the knowledge of one of ordinary skill in the art at the

Serial No. 10/035,400
February 9, 2004
Reply to the Office Action dated October 9, 2003
Page 7 of 8

time the invention was made, the Examiner has improperly used Applicants' own invention as a guide. It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992).

Accordingly, Applicants respectfully submit that Brebels et al., Kornrumpf et al., Carey et al., Ohya et al., Trinh et al., Peterson and Kroger, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicants' claim 1.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Brebels et al. in view of Kornrumpf et al., further in view of Carey et al., further in view of Ohya et al. and further in view of at least one of Trinh et al., Peterson, and Kroger.

In view of the foregoing remarks and the remarks presented in the Request for Reconsideration filed on January 6, 2004, Applicants respectfully submit that claim 1 is allowable. Claims 2 and 3 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.



Serial No. 10/035,400

February 9, 2004

Reply to the Office Action dated October 9, 2003

Page 8 of 8

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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